1. How can NESDIS improve their services and data?

- The relation of services and data. Without the best quality data set, the services won't be as good as they should be. Quality of the data and metadata should be emphasized.
- A data system must be integrated to work seamlessly with data served from non-NOAA sites to meet the needs of space weather researchers. Emulate the solar side of NGDC.
- One stop shopping for NOAA data should be broader and international.
- Integration of different data sets and data volume.
- More attention needs to be given to the resources invested in satellite, launch, and instrumentation.
- NPOESS supports centers -- data flows to them (e.g., fleet numerical, NESDIS), it is up to the centers to supply customers. Success is EDR at centers, no archiving, no customer interface, formats, and metadata issues.
- Focused on metadata being defined; challenge algorithms, sensors.
- We have a joint contractor/government teams, other teams, need to have a data users team.
- Coffey how do you like the NGDC's 'spidr' data delivery service? Reply: Don't- needs user feedback. A process to obtain user feedback is now underway.
- Funding to learn to use the data.
- Address entire data flow from start to finish.
- One stop shopping would be great when the same product is produced in different places. Help users decide which to choose sine there will be a problem when we integrate European data bases.
- Algorithms can be run on PCs everywhere, declare a particular algorithm.
- Assign tasks and share since the price of hardware is low.
- End-to-end data system includes the user, not just the archive. From the Naval perspective: Data acquisition: in situ, remote sensing is assimilated into a database, product, or model and applied to a user. Three users: 1)special warfare 2 submarine warfare, 3) strike warfare
- Don't like anonymous data sets, stamp origin on it.
- Ease of navigation is important.

2. How can NESDIS Centers best provide for customer feedback?

- Data users working group for NPOESS.
- Regular encounters of missions and data centers. Schedule annual and alternating conferences.
- Don't delete data. You may not think it is valid, but I may find it very useful. A user's group could help.
- In our field, we can't and don't use all the data, not all data needs to be preserved.
- Shorten processing time.
- Use the internet to post questionnaires.
- Assign a name to each data set page on the web page.
- Need registration and customer service. Need to give them something- inform them about updates.
- Newsletters to the community.
- Improve marketing and publicity.
- Hire a web page designer who is an expert.
- Better use of home pages for updates. Look at business/commercial tactics for customer feedback – follow E-business model.

3. Technology of the future -- How can it help?

2010 Environment

- Broader bandwidth, affordable.
- World's problems are US problems.
- Users want data faster
- Better coordination and sharing of services
- International Database and linkages
- Wireless environment communication
- Improved archive and storage capability
- Improved data transfer (electronic for large volumes)

Driving Forces

- Economic value of the data
- Evolving distributed systems tech and tools
- US Economy and investment for NOAA
- Detailed and extended information for environmental decision makers
- Need for water
- Need for energy, and new sources
- Need to maintain security, respond to incidents
- Health (disease outbreaks)
- Economic leverage
- Globalization- emerging political boundaries

For Economic Planning

- International partnerships
- Improved modeling and accuracy
- Size of data archive/tools/distribution methods

Predetermined Elements

- Population growth (increase in customer base, environmental pressure)
- More observing systems
- Desire for more data
- Limited funding
- Ecosystem strains
- Mammoth data volume increase (outpaces Moore's law)
- Wireless communication increase
- NPP/NPOESS
- Continued budget pressure

Critical Uncertainties

- Today's priorities may not be tomorrow's
- Funding fluctuations and impact on data/services
- Political boundaries
    - Consequences of climate change
    - Emphasis of subsequent administrations
- Fossil fuel availability
- Whether coordination occurs
- Global politics
- National commitment to keeping up in research, technology, and technical expertise.
- Archive management w/ the proper level of service (CLASS)
- Commitment to long-term funding
- Geopolitical cooperation
- Terrorism/security issues
- Data restrictions

- We need to sustain a global supply of clean water in spite of population growth, particularly on the coastlines. We looked at an attempt to remove the stovepipes that exist to implement a single functioning agency to observe and protect water resources. NESDIS takes over. Bureacratic inertia was removed, the agencies were streamlined. The process extended to an international agency.
- Difficulties: breaking money sharing barriers.
- Economic concerns caused increased user community needs. Researchers advertised the potential for serious problems. Both communities and the public pressured Congress into allocating a greater budget for NESDIS to provide enhanced monitoring and information services. NESDIS led a multi-agency and international coordination effort to manage data acquisition and disseminate high quality information. A dynamic interface was developed to enable users to rapidly search, access, and retrieve the data and products they needed from a wide array of distributed data bases, each supported by a vigorous set of metadata.
- Due to increased data volume, the government was unable to manage and therefore subcontracted it out. There were security issues. The government provided the necessary oversight over a fragmented data environment.
- NESDIS implements a fully automated end-to-end data ingest, processing, archiving, accessing, and stewardship oversight system that captured the economics of new technologies and scales. Much more automated, much less human intervention to handle mammoth volumes of data.

4. New data acquisitions: What data should NESDIS archive?

- All scientifically relevant data, and data/products needed by others for economic and resource management decisions.
- Multilevel metadata for all levels data collected in particular water quality and energy types, with multiagency cooperation.
- Archived value-added products
- All environmental data archived and the US involved with geopolitical agreements to encourage archiving of foreign countries which may be followed up by funding.

5. New products and services: What should we plan for?

- Improved visualization tools that handle multiple data streams.
- Receive and incorporate user feedback, establish performance metrics, and use these tools to upgrade data sets
- Maintain in-house expertise
- Satellite oceanography products from NOAA and non-NOAA data sources
- Integrated products across data centers, e.g. oceanography and climate and services to view together.
- Use GIS (migrate to)
- Real-time data availability, as appropriate
- Real-time tracking of the data (data drop outs etc)
- Merged multisensor products
- Fully functional globally distributed, but centrally accessible data sources (master directories)

6. What other issues need to be addressed?

- Advisory committees.
- Put some effort into reaching our educational users and getting them to provide their input in forums like this.
- Question: office of federal coordinator. Know that he is "toothless". Is he doing anything. Federal coordinator is not an implementing agency. They produce documents. They help get people working together. Recommendation that they get involved. But this maybe better done by agency to agency. They could be asked to examine data holding and exchange. Use the federal coordinator function to get a cross-agency view of data center functions.
- OFCM: Office of the Federal Coordinator for Meteorological Services is a specific agency. They have been effective in some areas.